Surface Coating of Wood Building Products NESHAP (subpart QQQQ)
Summary of Final Rule

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This document is intended to provide you a summary of requirements for the Surface Coating of Wood Building Products maximum achievable control technology (MACT), which is based on the final version of the rule (68 FR 31746; May 28, 2003). This summary is intended for informational purposes, does not constitute final agency action, and cannot be relied upon to create any rights enforceable by any party.

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REGULATORY OVERVIEW [back to top]

CFR Location:	40 CFR 63 Subpart QQQQ		
Regulatory Activity:	Proposal	June 21, 2002	[67 FR 42400]
	Promulgation	May 28, 2003	[68 FR 31746]
Docket Number:	OAR-2003-0002		
Compliance and Reporting:	See **Table 3** for information on compliance dates, performance testing and reporting.		

WHAT IS THE BACKGROUND OF THIS REGULATION? [back to top]

Pursuant to section 112 of the Clean Air Act (CAA), subpart QQQQ was added to 40 CFR Part 63. Section 112 of the CAA requires the U. S. Environmental Protection Agency (EPA) to list categories of major and area sources of Hazardous Air Pollutants (HAP) and to establish National Emission Standards for Hazardous Air Pollutants (NESHAP) for the listed source categories. The Wood Building Products (WBP) source category was originally listed as the "flatwood paneling" source category, but the name of the source category was changed to "wood building products" to more accurately reflect the types of products and manufacturing sources in the source category.

APPLICABILITY: AM I SUBJECT TO SUBPART QQQQ? [back to top]

[§63.4681]

The final NESHAP applies to any new or existing affected source that performs surface coating operations involving wood building products; uses at least 4,170 liters (1,100 gallons) of coatings per year; and is a major source, is located at a major source, or is part of a major source of HAP emissions. The following wood building products surface coating operations are not subject to the NESHAP:

- Surface coating operations covered by the Plywood and Composite Wood Products NESHAP upon promulgation (subpart DDDD);
- Surface coating operations covered by the Wood Furniture Manufacturing NESHAP (subpart JJ);
- Surface coating operations occurring during the manufacture of prefabricated homes and mobile/modular homes;
- Surface coating operations occurring at research or laboratory facilities; janitorial, building, and facility construction or maintenance operations; hobby shops that are operated for personal rather than commercial purposes; non-commercial coating operations or coating applicatio ns using handheld nonrefillable aerosol containers; and
- Surface coating operations involving wood treatment or fire retardant operations located at wood building products sources that involve impregnating the wood product with the wood treatment chemicals or fire retardant by using a retort or other pressure vessel.

If an affected source's surface coating operations are subject to the requirements of a subpart other than QQQQ and those operations utilize at least 95% of the total annual coating usage, then the source may demonstrate compliance with all the requirements, including all applicable emission limits, for that subpart.

WHAT IS A WOOD BUILDING PRODUCT? [back to top]

[§63.4681]

A wood building product is defined as any product that contains more than 50 percent by weight wood or wood fibers excluding the weight of any glass components, and is used in the construction, either interior or exterior, of a residential, commercial, or institutional building.

Figure 1 is a generalized process flow diagram for a wood building products surface coating operation. Since products have different surface coating requirements, not all operations will have all steps represented in Figure 1.

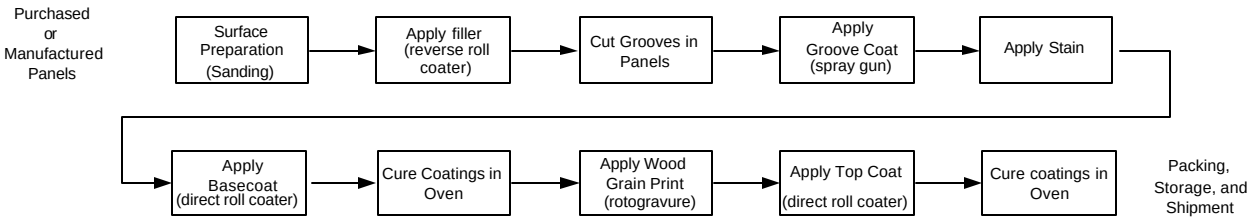


Figure 1. Typical Process Flow Diagram

WHAT IS A MAJOR SOURCE OF HAP EMISSIONS? [back to top]

A major source of HAP emissions is any stationary source or group of stationary sources located within a contiguous area and under common control that has the potential to emit at least 9.07 Mg/yr (10 tons/yr) of any single HAP or 22.68 Mg/yr (25 tons/yr) of any combination of HAP as defined in the NESHAP General Provisions (40 CFR part 63, subpart A) pursuant to section 112 of the CAA.

HOW DO I DETERMINE MY POTENTIAL TO EMIT? [back to top]

[Adapted from *Potential to Emit: A Guide for Small Businesses*, EPA-456/B-98-003, October 1998]

Potential to emit is determined by your maximum capacity. When calculating the potential to emit, include all HAP emission sources located within the contiguous area and under common control, even if the sources are unrelated to the surface coating of wood building products. To determine the potential to emit, follow these steps.

1. Identify all sources of emissions.

2. Identify all HAPs that your business emits.

3. Select a method to use to determine your HAP emissions. (See Table 1)

4. For each HAP, determine the maximum amount that each production process or piece of equipment in your business can emit in one year.

5. Add the maximum emissions from all production processes/equipment.

TABLE 1. METHODS TO DETERMINE YOUR HAP EMISSIONS [back to top]

Method	Instructions
Test data	Conduct onsite measurements of HAP emissions.
Material-balance calculations	Estimate HAP emissions by comparing types and quantities of inputs to types and quantities of outputs.
Source-specific models	Formulas for HAP emissions using source-specific parameters such as types and quantities of inputs, operating hours, and physical characteristics of equipment.
Emission factors	Use average HAP emission rates (provided by EPA, other agencies, or equipment vendors), multiplied by time or frequency of operation, to obtain emissions. HAP emission factors specific to your business can be used but should be approved by the state air pollution control agency.

WHAT IS AN AFFECTED SOURCE? [back to top]
[§63.4682]

The regulation applies to each new, reconstructed, and existing affected source(a new affected source is one on which construction commenced after June 21 ,2002). The affected source is the collection of all of the items listed below that are used for surface coating of wood building products:

(1) All coating operations as defined in §63.4781;

(2) All storage containers and mixing vessels in which coatings, thinners, and cleaning materials are stored or mixed;

(3) All manual and automated equipment and containers used for conveying coatings, thinners, and cleaning materials; and

(4) All storage containers and all manual and automated equipment and containers used for conveying waste materials generated by a coating operation.

WHAT ARE THE SUBCATEGORIES? [back to top]
[§63.4681]

(1) *Doors, windows and miscellaneous*. Any affected source that applies a coating to doors; finished doorskins; windows; door and window components, such as millwork, moulding, or trim; and other miscellaneous wood building products (including, but not limited to, moulding, trim, shingles and shutters).

(2) *Flooring*. Any affected source that applies a coating to solid wood flooring, engineered wood flooring, or wood laminate flooring.

(3) *Interior wall paneling and tileboard.* Any affected source that applies a coating to interior wall paneling products. Tileboard is a premium interior wall paneling product.

(4) *Other interior panels.* Any affected source that applies a coating to panels that are sold for uses other than interior wall paneling, such as coated particleboard, hardboard and perforated panels.

(5) *Exterior siding and primed doorskins*. Any affected source that applies a coating to panel siding, trimboard, lap siding, and primed doorskins. A doorskin coated with more than primer is included in the "doors, windows and miscellaneous" subcategory.

WHAT ARE THE EMISSION LIMITS? [back to top]
[§63.4690 and Tables 1 and 2 to subpart QQQQ]

The emission limits for existing sources cannot be less stringent than the average emission limit achieved by the best-performing 12 percent of existing sources in the category or subcategory (or the best-performing five sources for categories or subcategories with fewer than 30 sources). Emission limits for new or reconstructed sources are established by the best-controlled existing similar source in each of the subcategories.

TABLE 2. EMISSION LIMITS FOR AFFECTED SOURCES

If the affected source applies coating to products in the following subcategory...	**Then, for existing sources, the organic HAP emission limit in grams HAP/L solids (lb HAP/gal solids) is:**	**Or, for new or reconstructed sources, the organic HAP emission limit in grams HAP/L solids (lb HAP/gal solids) is:**
Doors, windows and miscellaneous	231 (1.93)	57 (0.48)
Flooring	93 (0.78)	0 (0.00)
Interior wall paneling or tileboard	183 (1.53)	5 (0.04)
Other interior panels	20 (0.17)	0 (0.00)
Exterior siding and primed doorskins	7 (0.06)	0 (0.00)

WHAT ARE MY OPTIONS FOR MEETING THE EMISSION LIMITS? [back to top]
[§63.4691]

To meet the applicable emission limit(s), one of the three compliance options listed in paragraphs (1) through (3) below must be used for each coating operation (you can use different options on different coating operations and on the same coating operation at different times).

(1) *Compliant material option.* Demonstrate that the organic HAP content of each coating used in the coating operation(s) is less than or equal to the applicable emission limit and that each thinner and each cleaning material used contains no organic HAP.

(2) *Emission rate without add-on controls option*. Demonstrate that, based on the coatings, thinners, and cleaning materials used in the coating operation(s), the rolling 12-month average organic HAP emission rate for the coating operation(s) is less than or equal to the applicable emission limits.

(3) *Emission rate with add-on controls option*. Demonstrate that, based on the emission capture and add-on control efficiencies achieved and the coatings, thinners, and cleaning materials used in the coating operation(s), the rolling 12-month average organic HAP emission rate for the coating operation(s) is less than or equal to the applicable emission limits. You must also demonstrate that all capture equipment and control devices for the coating operation(s) meet specified operating limits. Affected sources utilizing add-on controls must also meet work practice standards.

FOR EACH OPTION, WHAT AM I REQUIRED TO DO? [back to top]

If you **do not** use capture equipment and control devices, Subpart QQQQ requires you to do all of the following:

- Meet emission limits
- Submit notifications and reports and keep records
- Comply with 40 CFR 63, Subpart A (General Provisions)

If you use capture equipment and control devices, Subpart QQQQ requires you to do all of the following:

- Meet emission limits
- Meet operating limits
- Comply with work practice standards
- Conduct monitoring
- Submit notifications and reports and keep records
- Develop and implement a Start-up, Shutdown and Malfunction Plan (SSMP)
- Comply with 40 CFR 63, Subpart A (General Provisions)

HOW DO I CALCULATE MY HAP CONTENT AND HAP EMISSION RATE? [back to top]
[§§63.4741, 63.4751, and 63.4761]

For the compliant material option, determine the mass of organic HAP and volume fraction of coating solids for each coating. Use these values to calculate the organic HAP content of each coating (mass of organic HAP divided by the volume fraction of the coating solids). The result must be equal to or less than the established emission limit listed in Table 2 and each thinner and cleaning material used must contain no organic HAP.

The emission rate without add-on controls option and the emission rate with add-on controls option require you to use the collected coating, thinner, and cleaning material data to calculate a rolling 12-month average organic HAP emission rate (total mass of organic HAP emitted divided by total volume of coating solids used) on a monthly basis. Data collected from the current month is combined with the previous 11 months' data to calculate the rolling 12-month average emission rate. The rolling 12-month emission rate is then documented and used to demonstrate compliance with the applicable HAP emission limit. The emission rate must be equal to or less than the established emission limit listed in Table 2.

The rule contains detailed instructions for these calculations.

WHAT ARE OPERATING LIMITS AND HOW DO I MEET THEM? [back to top]
[§63.4692]

The operating limits are the site-specific parameter limits (e.g., temperature, flow rate) you determine for your capture equipment and control device(s) during the performance test. Your operating limits must be monitored by a continuous parameter monitoring system (CPMS).

WHAT WORK PRACTICE STANDARDS MUST I MEET? [back to top]
[§63.4693]

If you use capture equipment and control device(s), you must develop, implement and maintain a work practice plan. The plan should include actions to:

- Store all organic-HAP coatings, thinners, cleaning materials and waste materials in closed containers
- Cover mixing vessels containing organic-HAP except when adding, mixing or removing contents
- Minimize emissions of organic-HAP during cleaning of storage, mixing and conveying equipment
- Minimize spills of organic-HAP coatings, thinners, cleaning materials and waste materials
- Minimize emissions through careful handling and transfer (conveyed from one location to another in closed containers or pipes) of organic-HAP-containing coatings, thinners, cleaning materials, and wastes

WHAT MONITORING IS REQUIRED FOR MY CAPTURE EQUIPMENT AND ADD-ON CONTROL DEVICES? [back to top]
[§63.4768]

Continuous parameter monitoring is required for all capture equipment and add-on control devices.

Capture system bypass lines: Install one of the following devices to ensure the capture equipment is not being bypassed:

- Flow control position indicator
- Car-seal or lock-and-key valve closures
- Valve closure monitoring
- Automatic shutdown system

Carbon adsorbers: Monitor total regeneration desorbing gas mass flow and carbon bed temperature.

Catalytic and thermal oxidizers: For a thermal oxidizer, monitor gas temperature in the firebox or in the duct immediately downstream of the firebox. For a catalytic oxidizer, monitor gas temperature immediately before the catalyst bed. A typical thermal oxidizer and catalytic oxidizer are shown in Figure 2 and Figure 3, respectively.

Condensers: Monitor outlet gas temperature.

Concentrators: Monitor temperature in the desorption gas stream and pressure drop.

Emission capture systems: Monitor air flow and pressure drop.

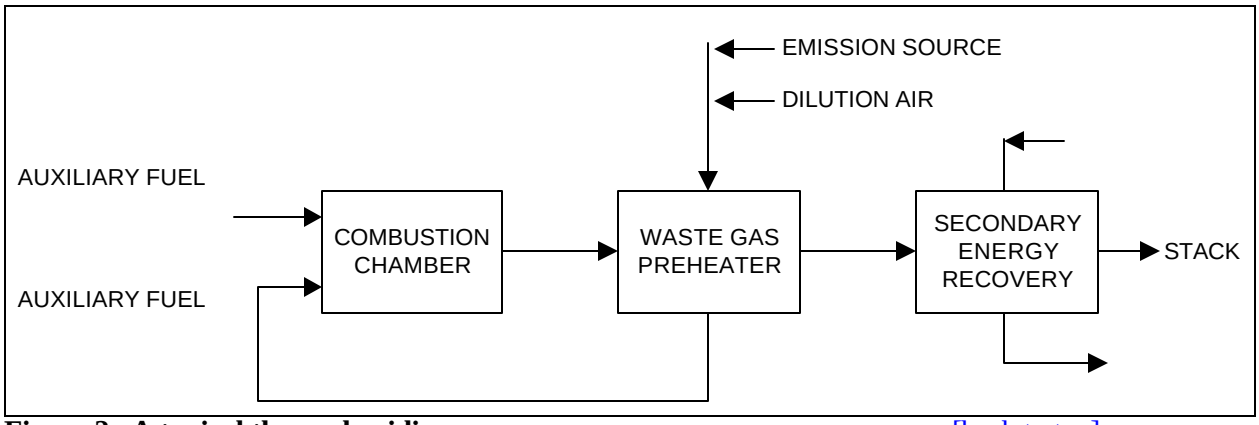


Figure 2. A typical thermal oxidizer [back to top]

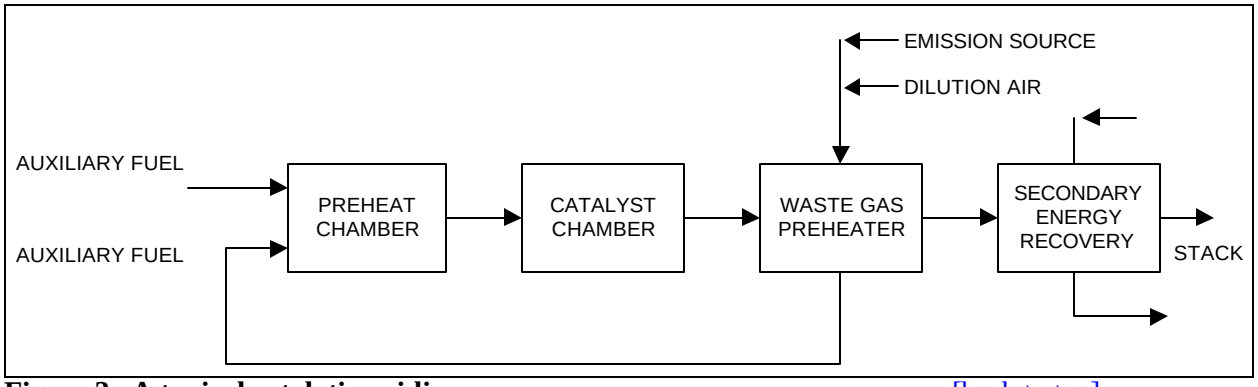


Figure 3. A typical catalytic oxidizer [back to top]

WHEN IS THE COMPLIANCE DATE FOR SUBPART QQQQ? [back to top]
[§63.4683]

For an *existing affected source*, the compliance date is May 28, 2006. For a *new or reconstructed affected source*, the compliance date is the date of initial startup of your affected source or May 28, 2003, whichever is later.

The *effective date* (May 28, 2003) is the date on which the final rule was published in the Federal Register.

The compliance requirements for new, reconstructed, and existing sources are summarized in Table 3.

The reporting timeline for existing sources, shown relative to the effective date, is shown in Figure 5.

WHEN IS THE INITIAL COMPLIANCE PERIOD? [back to top]
[§§63.4740, 63.4750, and 63.4760]

The initial compliance period is the 12-month period beginning on the compliance date. Since the standard (e.g., emission limits) is based on a rolling 12-month average emission rate, sources are given a 12-month period to change their surface coating operations and monitor their monthly HAP emission rates to ensure that their initial rolling 12-month emission rate complies with the applicable emission limit(s).

If the compliance date occurs on any day other than the first day of a month, then the initial compliance period extends through the end of that month plus the next 12 months.

HOW DO I DEMONSTRATE INITIAL COMPLIANCE WITH THE STANDARD? [back to top]

For the Compliant Material Option (Option 1): [§63.4741]
Determine the mass of organic HAP in all coatings, thinners, and cleaning materials used and the volume fraction of coating solids in all coatings used. Demonstrate that the organic HAP content of each coating used is less than or equal to the applicable emission limit and that each thinner and cleaning material used contains no organic HAP.

For the Emission Rate Without Add-On Controls Option (Option 2): [§63.4751]
Determine the mass of organic HAP in all coatings, thinners, and cleaning materials used and the volume fraction of coating solids in all coatings used. Demonstrate that the rolling 12-month average organic HAP emission rate from the combination of all materials used is less than or equal to the applicable emission limit.

For the Emission Rate With Add-On Controls Option (Option 3): [§63.4761]
Determine the mass of organic HAP in all coatings, thinners, and cleaning materials used and the volume fraction of coating solids in all coatings used. Using your performance test, determine the operating limits that will result in capture and control efficiencies that will reduce your organic HAP rate so that it is less than or equal to the applicable emission limit. Operating limits must be continuously monitored by a continuous parameter monitoring system. You must also develop and implement a Work Practice Plan and a Startup, Shutdown, and Malfunction Plan (SSMP). Demonstrate that the rolling 12-month average organic HAP emission rate from the combination of all materials used is less than or equal to the applicable emission limit.

HOW DO I DEMONSTRATE CONTINOUS COMPLIANCE WITH THE STANDARD? [back to top]

For the Compliant Material Option (Option 1): [§63.4742]
To demonstrate continuous compliance, the organic HAP content in each coating you use during the compliance period must be less than or equal to the applicable emission limit and all thinners and cleaning materials you use during the compliance period must contain no organic HAP.

For the Emission Rate Without Add-On Controls Option (Option 2): [§63.4752]
To demonstrate continuous compliance, the rolling 12-month average organic HAP emission rate determined from all coatings, thinners, and cleaning materials you use during the compliance period must be less than or equal to the applicable emission limit.

For the Emission Rate With Add-On Controls Option (Option 3): [§63.4763]
To demonstrate continuous compliance, the rolling 12-month average organic HAP emission rate determined from all coatings, thinners, and cleaning materials you use during the compliance period, along with the capture and control device efficiencies, must be less than or equal to the applicable emission limit. You must also maintain continuous achievement of operating limits, and operate according to your work practice plan and startup, shutdown, and malfunction plan.

WHAT ARE THE NOTIFICATION, REPORTING, AND RECORDKEEPING REQUIREMENTS? [§§63.4710, 63.4720, and 63.4730] [back to top]

These requirements are also summarized in Table 3.

Initial Notification: The initial notification states that your affected source is subject to the Wood Building Products standards. You must submit this within 120 days after the effective date (i.e., the date of startup or May 28, 2003, whichever is later).

Notification of Intent to Conduct a Performance Test: If your affected source is required to conduct a performance test (e.g., because it uses add-on control equipment), you must submit a notification of intent to conduct a performance test at least 60 days prior to the test.

Performance Test Report: If your affected source is required to conduct a performance test (e.g., because it uses add-on control equipment), you must submit a performance test report within 60 days after completing the performance test. The performance test is required to be conducted no later than 180 days after the applicable compliance date for new or reconstructed sources, and no later than May 28, 2006 for existing affected sources.

Notification of Compliance Status: If you own or operate an affected source, you must submit a Notification of Compliance Status (NOCS) within 30 days after the initial compliance period (the first 12 months after the compliance date). The NCS certifies that your affected source has complied with the standards, identifies the option(s) you used to demonstrate initial compliance, summarizes the data and calculations supporting the compliance demonstration, and describes how you will determine continuous compliance.

Semiannual Compliance Reports: After the initial compliance period, each affected source must submit semiannual compliance reports due on July 31 and January 31.

Startup, Shutdown, and Malfunction Reports: For sources using add-on controls, a startup, shutdown, and malfunction report must be submitted immediately when there is a startup, shutdown, or malfunction of the control device that is not consistent with the startup, shutdown, and malfunction plan.

Records: Affected sources are required to keep records of reported information and all other information necessary to document compliance with the final rule for 5 years. As required under the General Provisions, records for the 2 most recent years must be kept on-site; the other 3 years may be kept off-site. Records pertaining to the design and operation of the control and monitoring equipment must be kept for the life of the equipment. Depending on the compliance option that you choose, there may be additional recordkeeping requirements, as described in the final rule.

HOW MANY SOURCES WILL BE AFFECTED, AND WHAT ARE THE ESTIMATED EMISSION REDUCTIONS AND COSTS?

[back to top]

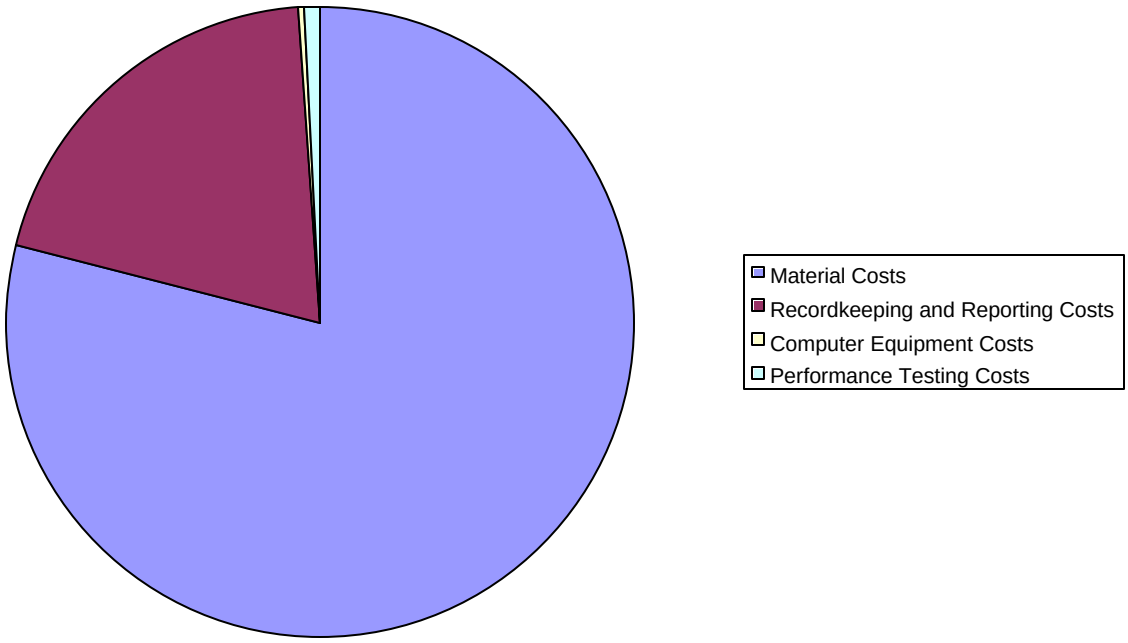
The EPA has estimated that there are approximately 215 major sources in the wood building products (surface coating) source category and has identified these sources as major sources of HAP emissions such as xylene, toluene, ethyl benzene, ethylene glycol monobutyl ether (EGBE), glycol ethers (not including EGBE), methyl isobutyl ketone (MIBK), methanol, styrene, and formaldehyde.

This standard is estimated to reduce HAP emissions by 4,900 tons per year (tpy) (4,400 megagrams per year (Mg/yr)) or by 63 percent.

The total annualized costs for the approximate 215 existing major sources are estimated at $22.5 million. According to estimates, recordkeeping and reporting costs will contribute $5.6 million to the annualized cost of this NESHAP, material costs will contribute $16.5 million, and performance testing will contribute $308,300 (See Figure 4).

The economic impacts of the final rule are expected to be minimal, with price increases for affected wood building products surface coating facilities expected to be only 0.04 percent.

Figure 4. Costs to Implement Subpart QQQQ



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WHAT IF I HAVE QUESTIONS? [back to top]

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WILL IMPLEMENTATION MATERIALS BE AVAILABLE FOR THIS RULE? [back to top]

Implementation materials (i.e. brochures, Q&A, example report forms, etc.) have been developed for this rule. You can keep informed of the implementation activities planned by EPA's Office of Air Quality Planning and Standards (OAQPS) by periodically checking the rule's implementation Plan. For Wood Building Products, that address is www.epa.gov/ttn/atw/wbldg/wbldgplan.html

For additional information on implementation tool development activities for this rule or other surface coating rules, you may contact Ingrid Ward of the Program Implementation and Review Group (PIRG). Her office is also located in Research Triangle Park, North Carolina. She can be contacted via e-mail at ward.ingrid@epa.gov.

TABLE 3—COMPLIANCE TIMELINE FOR SUBPART QQQQ [back to top]

Note: Timeline is organized by "due" date.

Requirement…	If you are an **existing source**, then requirement is due on…	If you are a **new or reconstructed source**, then requirement is due on…
Effective Date of subpart QQQQ	**May 28, 2003**	**May 28, 2003**
Initial Notification [§63.4710(b), 63.9(b)]	**September 25, 2003** - Submit 120 days after effective date	If initial startup is before the effective date, submit by **September 25, 2003,** 120 days after effective date; if initial startup is after effective date, submit within 120 days after startup
Notification of Special Compliance Requirements [§63.9(d), §63.6(b)]	NA Applies only to new sources subject to §63.6(b)(3)-(b)(4)	Submit with Initial Notification required under §63.9(b)
Compliance Extension Request [§63.9(c), §63.6(i)]	**May 28, 2005** Submit in accordance with §63.9(c) – submit 12 months prior to compliance date	NA Applicable only to existing sources
Notification of Intent to Conduct A Performance Test [§63.9(e)]	Submit in accordance with §63.7 and §63.9(e) – 60 days prior to beginning the test	Submit in accordance with §63.7 and §63.9(e) – 60 days prior to beginning the test
Performance Test [§63.7(a)(2), §63.4760] Applies only if you use a control device	Complete by compliance date	Complete as required in §63.7(a)(2) – within 180 days after compliance date
Compliance Date [§63.4683]	**May 28, 2006** - 3 years after effective date	Effective date (May 28, 2003) or upon startup, whichever is later
Performance Test Reports [§63.4720(b)] Applies only if you use a control device	Submit in accordance with §63.10(d)(2)- within 60 days after the performance test is completed	Submit in accordance with §63.10(d)(2)- within 60 days after the performance test is completed
Notification of Compliance Status (NOCS) [§63.4710(c)]	**June 30, 2007** Submit 1 year and 30 days after the Compliance Date (30 days after Initial Compliance Period ends)	Submit 1 year and 30 days after your Compliance date (30 days after Initial Compliance Period ends)

Requirement…	If you are an **existing source**, then requirement is due on…	If you are a **new or reconstructed source**, then requirement is due on…
First Semi-annual Compliance Report [§63.4720(a)]	**July 31, 2007** The initial semi-annual report covers the period between 6/01/07 to 6/30/07	Submit by July 31 or January 31, whichever date is after the end of the calendar half (e.g., Jan-June and July-Dec) that immediately follows your initial compliance period.
Subsequent Semi-annual Compliance Reports [§63.4720(a)]	Submit by July 31 (covering January 1 through June 30) and January 31 (covering July 1 through December 31) of every year.	Submit by July 31 (covering January 1 through June 30) and January 31 (covering July 1 through December 31) of every year.
Periodic Start-up, Shutdown, and Malfunction (SSM) Reports [§63.4720(c), 63.10(d)(5)(i)] Applies only if you use a control device	Submit in accordance with §63.10(d)(5), and include in your semi-annual compliance report.	Submit in accordance with §63.10(d)(5), and include in your semi-annual compliance report.
Immediate SSM Reports [§63.4720(c), 63.10(d)(5)(ii)] Applies only if you use a control device	Submit within 2 working days by phone or fax and within 7 working days by letter.	Submit within 2 working days by phone or fax and within 7 working days by letter.

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Reporting Timeline

Existing Sources

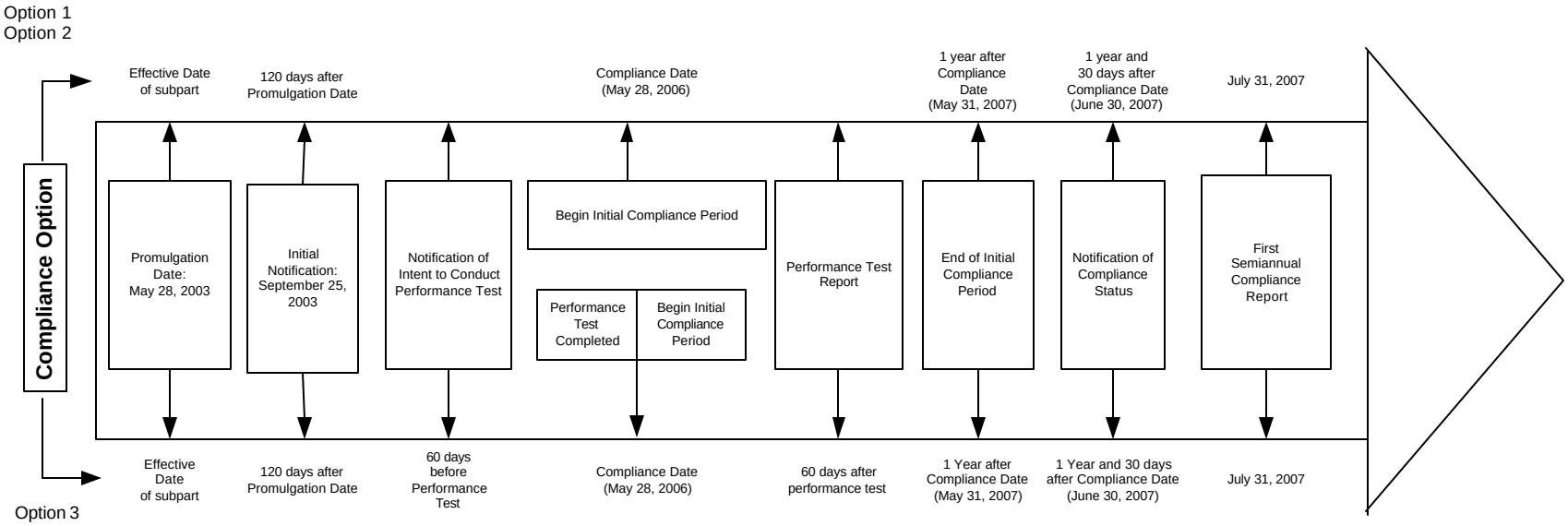

Figure 5. Reporting Timeline For Existing Sources

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